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10/591,928	07/11/2007	Alain Clouet	5460-85PUS	5398

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Thomas Langer
Cohen, Pontani, Lieberman & Pavane
551 Fifth Avenue
Suite 1210
New York, NY 10176

EXAMINER

JOHNSTONE, ADRIENNE C

ART UNIT	PAPER NUMBER
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1747

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/591,928	Applicant(s) CLOUET ET AL.	
	Examiner /Adrienne C. Johnstone/	Art Unit 1747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20110204</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. Applicant argues that the copies of the foreign references listed in the September 5, 2006 IDS were submitted by WIPO, but as set forth in paragraph 4 of the Office action mailed August 6, 2010 this is not the case: in both the 371 acceptance letter (Form PCT/DO/EO/903) mailed September 12, 2007 and the Notice of Missing Requirements mailed May 8, 2007 the copies of the references are not present in the listing of the items received from the International Bureau. See MPEP 609.03,

“The examiner will consider the documents cited in the international search report in a PCT national stage application when the Form PCT/DO/EO/903 indicates that both the international search report **and the copies of the documents** are present in the national stage file.”

(emphasis added) and MPEP 1893.03(g),

“When all the requirements for a national stage application have been completed, applicant is notified (Form PCT/DO/EO/903) of the acceptance of the application under 35 U.S.C. 371, including an itemized list of the items received. The itemized list includes an indication of whether a copy of the international search report **and copies of the references cited therein** are present in the national stage file. The examiner will consider the documents cited in the international search report, without any further action by applicant under 37 CFR 1.97 and 1.98, when both the international search report **and copies of the documents** are indicated to be present in the national stage file. The examiner will note the consideration in the first Office action. There is no requirement that the examiners list the documents on a PTO-892 form. See form paragraphs 6.53, 6.54,

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and 6.55 (reproduced in MPEP § 609.03<). Otherwise, applicant must follow the procedure set forth in 37 CFR 1.97 and 1.98 in order to ensure that the examiner considers the documents cited in the international search report.”

(emphasis added).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants now recite in claim 1 that “normal use” is when the tubeless tire is inflated to “a” utilization pressure, but this contradicts the specification: as noted in paragraph 7 of the Office action mailed August 6, 2010, specification paragraph 0015 describes “normal use” as both inflated and non-punctured; further, specification paragraph 0011 describes the inflation in “normal use” is inflation to the tire’s utilization pressure and not “a” utilization pressure of some random tire. One way to overcome this rejection would be to amend claim 1 such that in line 11 “a utilization pressure” is changed to -- its utilization pressure in the absence of a puncture in the tubeless tire -- .

Applicants now recite in claim 1 that the plurality of bows in the framework impart their shape to the toric body “in a direction transverse to the at least one circumferential band”, but this contradicts the specification: as noted in paragraph 7 of the Office action mailed August 6, 2010, specification paragraph 0043 describes suitable bow geometry as transverse geometry, such as in the direction of the axis of rotation of the tire/rim assembly, which is appropriate for imparting to the skin (toric body) a mean meridian section geometry so as to be able to define the inner and outer

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cavities; further, a) original claim 9 recited “the transverse direction”, b) original Figures 1-4 show the bows imparting their shape to the toric body in a direction parallel to the direction of the axis of rotation of the tire/rim assembly, and c) specification paragraph 0042 describes the bows as being fixed on the circumferential band such that the band is substantially equidistant from the axial ends of the bows (which is true when the bows are imparting their shape to the toric body in the transverse direction only if the transverse direction is a direction parallel to the direction of the axis of rotation of the tire/rim assembly). One of ordinary skill in the art would therefore know that bows imparting their shape to the toric body in a direction parallel to the direction of the axis of rotation of the tire/rim assembly have a suitable bow geometry but would not know what other transverse geometries would be suitable and thus not know what other transverse geometries would be encompassed by the claim language. One way to overcome this rejection would be to amend claim 1 such that in the last two lines “transverse to the at least one circumferential band” is changed to -- parallel to the direction of the axis of rotation of the tubeless tire and rim assembly -- .

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

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See paragraph 3 above: to the extent that the language added to claim 1 contradicts the specification as set forth in paragraph 3 above, such language is not supported by the original disclosure.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Slezak (2,665,731) in view of Palmer (493,220), King (2,754,876), and Nonnamaker (3,129,743) or, alternatively, Slezak (2,665,732) in view of Palmer (493,220), King (2,754,876), and Nonnamaker (3,129,743).

Slezak '731 discloses a tire and rim assembly similar to the claimed tire and rim assembly but wherein the carcass reinforcement in the body is not explicitly disclosed to have a skin of resilient elastomeric material, the two inextensible circumferential reinforcement structures anchoring the carcass reinforcement in the body do not have an internal diameter less than the maximum diameter of the rim, and the claimed framework is not disclosed to be present (embodiment of Figures 1 and 2, col. 1 line 38 - col. 4 line 30: tire 11 having tread portion 12 (crown), sidewalls 13, and bead portions 14 seated on flanges (edges) of rim 15; diaphragm 10 (toric body) defining inner cavity 19 and outer cavity 20 communicating through aperture 29, comprising plies of bias-laid material similar to tire casing (carcass) material which are anchored to wire beads 17 in order to provide strength and flexibility to the diaphragm 10 (inextensible circumferential reinforcement structures anchoring the carcass reinforcement in the body), the wire beads 17 seated against bead portion shoulders 18; in the presence of a puncture removing the inflation in outer cavity 20 as shown in Figure 2, the diaphragm 10 deforms under the action of the inflation still in inner cavity 19 to block the puncture); however, it is well known to provide plies of tire casing material (carcass plies) with a

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rubber skin in order to fix in place the reinforcement and protect it from abrasion, as evidenced for example by Palmer (p. 1 line 8 - p. 2 line 107), King teaches to eliminate the need for special molding of the tire while maintaining proper positioning of the body in such tire and rim assemblies by eliminating the bead portion shoulders and moving the two inextensible circumferential reinforcement structures anchoring the carcass reinforcement in the body down to the rim adjacent the tire bead portions and below the rim flanges, optionally providing a connecting rubber portion making the body into a closed torus (Figures 1 and 2, col. 1 line 17 - col. 4 line 25), and Nonnamaker teaches to provide the toric body in such a tire and rim assembly with an independent framework to support the toric body in the desired position including carrier frame 27 comprising a plurality of hoops 28 secured together by annular members 29, 30, and 31 (Figures 3-5, col. 4 line 16 - col. 5 line 11). It would therefore have been obvious to one of ordinary skill in the art to a) provide the toric body in the above tire and rim assembly with a rubber skin in order to fix in place the reinforcement and protect it from abrasion, b) eliminate the need for special molding of the tire while maintaining proper positioning of the body in the above tire and rim assembly by eliminating the bead portion shoulders and moving the two inextensible circumferential reinforcement structures anchoring the carcass reinforcement in the body down to the rim adjacent the tire bead portions and below the rim flanges, optionally providing a connecting rubber portion making the body into a closed torus, and c) provide the toric body with the claimed independent framework in order to support the toric body in the desired position. As to the inner cavity volume limitation, Slezak '731 and Nonnamaker clearly depict the inner cavity volume defined by toric body occupying greater than one third of the maximum cavity volume.

Alternatively, Slezak '732 discloses a tire and rim assembly similar to the claimed tire and rim assembly but wherein the carcass reinforcement in the body is not explicitly disclosed to have a skin

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of resilient elastomeric material, the two inextensible circumferential reinforcement structures anchoring the carcass reinforcement in the body do not have an internal diameter less than the maximum diameter of the rim, and the claimed framework is not disclosed to be present (embodiments of Figures 1-7, col. 1 line 1 - col. 5 line 51: for example in the embodiment of Figures 1 and 2, tire 21 having tread portion 22 (crown), sidewalls 23, and bead portions 24 seated on flanges (edges) of rim 25; diaphragm 20 (toric body) defining inner cavity 29 and outer cavity 30 communicating through aperture 33, comprising plies of bias-laid material similar to tire casing (carcass) material which are anchored to wire beads 27 in order to provide strength and flexibility to the diaphragm 20 (inextensible circumferential reinforcement structures anchoring the carcass reinforcement in the body), the wire beads 27 seated against bead portion shoulders 28; in the presence of a puncture removing the inflation in outer cavity 30 as shown in Figure 2, the diaphragm 20 deforms under the action of the inflation still in inner cavity 29 to block the puncture); however, it is well known to provide plies of tire casing material (carcass plies) with a rubber skin in order to fix in place the reinforcement and protect it from abrasion, as evidenced for example by Palmer (p. 1 line 8 - p. 2 line 107), King teaches to eliminate the need for special molding of the tire while maintaining proper positioning of the body in such tire and rim assemblies by eliminating the bead portion shoulders and moving the two inextensible circumferential reinforcement structures anchoring the carcass reinforcement in the body down to the rim adjacent the tire bead portions and below the rim flanges, optionally providing a connecting rubber portion making the body into a closed torus (Figures 1 and 2, col. 1 line 17 - col. 4 line 25), and Nonnamaker teaches to provide the toric body in such a tire and rim assembly with an independent framework to support the toric body in the desired position including carrier frame 27 comprising a plurality of hoops 28 secured together by annular members 29, 30, and 31 (Figures 3-5, col. 4 line 16 - col. 5 line 11). It would

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therefore have been obvious to one of ordinary skill in the art to a) provide the toric body in the above tire and rim assembly with a rubber skin in order to fix in place the reinforcement and protect it from abrasion, b) eliminate the need for special molding of the tire while maintaining proper positioning of the body in the above tire and rim assembly by eliminating the bead portion shoulders and moving the two inextensible circumferential reinforcement structures anchoring the carcass reinforcement in the body down to the rim adjacent the tire bead portions and below the rim flanges, optionally providing a connecting rubber portion making the body into a closed torus, and c) provide the toric body with the claimed independent framework in order to support the toric body in the desired position. As to the inner cavity volume limitation, Slezak '732 and Nonnamaker clearly depict the inner cavity volume defined by toric body occupying greater than one third of the maximum cavity volume.

Contrary to applicants' arguments, claim 9 was not indicated as allowable in the Office action mailed August 6, 2010. Also, note that there is no special definition for the term "band" in the original disclosure and that the ordinary plain meaning of the word "band" includes the annular members 29, 30, and 31 ("something that binds, ties together, restrains, etc.", Webster's New World Dictionary of American English, p. 107).

8. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Slezak (2,665,731) in view of Palmer (493,220), King (2,754,876), and Nonnamaker (3,129,743) or, alternatively, Slezak (2,665,732) in view of Palmer (493,220), King (2,754,876), and Nonnamaker (3,129,743) as applied to claims 1-3 above, and further in view of Domchick (4,832,102).

Domchick teaches to provide pneumatic tire carcass reinforcement in the form of a plurality of plies of aromatic polyamide cables having a cord angle of 75 to 90 degrees, with the cords of one ply crossing those of adjacent plies when the cord angles are other than 90 degrees, in order to

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obtain high modulus and breaking strength as well as adequate fatigue resistance (col. 1 line 5 - col. 2 line 21 and col. 4 line 50 - col. 5 line 56). It would therefore have been obvious to one of ordinary skill in the art to provide the carcass reinforcement in the toric body of the above tire and rim assembly in the form of a plurality of plies of aromatic polyamide cables having a cord angle of 75 to less than 90 degrees (90 degree plies would not be bias-laid plies) with the cords of one ply crossing those of adjacent plies in order to further strengthen the diaphragm constituting the toric body.

9. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Slezak (2,665,731) in view of Palmer (493,220), King (2,754,876), and Nonnamaker (3,129,743) or, alternatively, Slezak (2,665,732) in view of Palmer (493,220), King (2,754,876), and Nonnamaker (3,129,743) as applied to claims 1-3 above, and further in view of Japanese Patent Application 2002-120526 A.

JP '526 teaches to provide the crown part of the toric body in such tire and rim assemblies with plural circumferentially oriented waveform cords in order to protect the toric body from damage after the tire is punctured (abstract, Figures 1-3, paragraphs 0006-0007 (determined through oral translation)). It would therefore have been obvious to one of ordinary skill in the art to provide the crown part of the toric body in the above tire and rim assembly with plural circumferentially oriented waveform cords in order to protect the toric body from damage after the tire is punctured.

Allowable Subject Matter

10. Favorable consideration would be given to claim 1 with the added limitation that each of the plurality of bows comprises a central part extending in a direction parallel to the direction of the axis of rotation of the tire and rim assembly and a rounded part at each of its axial ends to avoid damaging the toric body with the ends (specification paragraphs 0042-0043, Figures 1-4).

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Adrienne C. Johnstone/ whose telephone number is (571) 272-1218. The examiner can normally be reached on Monday-Friday, 1:00PM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Adrienne C. Johnstone/
Primary Examiner
Art Unit 1747

Adrienne Johnstone

April 11, 2011